

## Claims

What is claimed is:

1. A method of volume detailing a building structure that allows for the consideration of the positioning of various structural and non-structural components, comprising the steps of:

providing a three dimensional building structure volume, wherein the three dimensional

building structure volume models a building structure;

positioning a three dimensional component at a desired location in the three dimensional building structure volume; and

sectioning the three dimensional building structure volume at a point of interest to provide a building structure profile that includes a component profile if the three dimensional component extends through the point of interest.

2. The method of claim 1, further including the step of:

placing a plurality of additional component profiles within the building structure profile at the point of interest such that the additional component profiles do not interfere with one another or interfere with the component profile of the three dimensional component.

3. The method of claim 1, wherein the building structure volume and the three dimensional component are selected from a group of predetermined shapes.

4. The method of claim 1, wherein the building structure is a system of roof trusses.

5. The method of claim 4, wherein an outer surface of the building structure volume is defined by at least an outer surface of a bottom chord and an outer surface of a plurality of top chords of a roof truss that is part of the system of roof trusses.

6. The method of claim 1, wherein the positioning a three dimensional component at a desired location in the three dimensional building structure volume step further includes the step of:

subtracting the three dimensional component from the three dimensional building structure volume.

7. The method of claim 1, wherein the three dimensional component is an air duct associated with a heating, ventilating and air conditioning (HVAC) system.

8. The method of claim 1, wherein the three dimensional component is a cat walk.

9. The method of claim 2, wherein the placing a plurality of additional component profiles within the building structure profile at the point of interest such that the additional component profiles do not interfere with one another or interfere with the component profile of the three dimensional component step further includes the step of:

5 verifying that the placement of structural members is such that the building structure will meet design criteria.

10. A building structure volume detailing system for volume detailing a building structure that allows for the positioning of various structural and non-structural components, comprising:

a processor;

5 a memory subsystem coupled to the processor, the memory subsystem storing

information;

an input device coupled to the processor, the input device receiving input from a user;

and

volume detailing code for causing the processor to perform the steps of:

providing a three dimensional building structure volume, wherein the three dimensional building structure volume models a building structure;

positioning a three dimensional component at a desired location in the three dimensional building structure volume; and

sectioning the three dimensional building structure volume at a point of interest to provide a building structure profile that includes a component profile if the three dimensional component extends through the point of interest.

11. The system of claim 10, further including the step of:

placing a plurality of additional component profiles within the building structure profile at the point of interest such that the additional component profiles do not interfere with one another or interfere with the component profile of the three dimensional component.

12. The system of claim 10, wherein the building structure volume and the three dimensional component are selected from a group of predetermined shapes.

13. The system of claim 10, wherein the building structure is a system of roof trusses.

14. The system of claim 13, wherein an outer surface of the building structure volume is defined by at least an outer surface of a bottom chord and an outer surface of a plurality of top chords of a roof truss that is part of the system of roof trusses.

15. The system of claim 10, wherein the positioning a three dimensional component at a desired location in the three dimensional building structure volume step further includes the step of:

subtracting the three dimensional component from the three dimensional building structure volume.

16. The system of claim 10, wherein the three dimensional component is an air duct associated with a heating, ventilating and air conditioning (HVAC) system.

17. The system of claim 10, wherein the three dimensional component is a cat walk.

18. The system of claim 10, wherein the placing a plurality of additional component profiles within the building structure profile at the point of interest such that the additional

component profiles do not interfere with one another or interfere with the component profile of the three dimensional component step further includes the step of:

5 verifying that the placement of structural members is such that the building structure will meet design criteria.

19. A roof truss volume detailing system for volume detailing a system of roof trusses that allows for the consideration of the positioning of various structural and non-structural components, comprising:

a processor;

a memory subsystem coupled to the processor, the memory subsystem storing information;

an input device coupled to the processor, the input device receiving input from a user;

and

volume detailing code for causing the processor to perform the steps of:

10 providing a three dimensional roof truss volume, wherein the three dimensional roof truss volume models a system of roof trusses;

positioning a three dimensional component at a desired location in the three dimensional roof truss volume; and

sectioning the three dimensional roof truss volume at a point of interest to

15 provide a roof truss profile that includes a component profile if the three dimensional component extends through the point of interest.

20. The system of claim 19, further including the step of:

placing a plurality of additional component profiles within the roof truss profile at the point of interest such that the additional component profiles do not interfere with one another or interfere with the component profile of the three dimensional component.

21. The system of claim 19, wherein the roof truss volume and the three dimensional component are selected from a group of predetermined shapes.

22. The system of claim 19, wherein an outer surface of the roof truss volume is defined by at least an outer surface of a bottom chord and an outer surface of a plurality of top chords of a roof truss that is part of the system of roof trusses.

23. The system of claim 20, wherein the positioning a three dimensional component at a desired location in the three dimensional roof truss volume step further includes the step of:

subtracting the three dimensional component from the three dimensional roof truss

5 volume.

24. The system of claim 19, wherein the three dimensional component is an air duct associated with a heating, ventilating and air conditioning (HVAC) system.

25. The system of claim 19, wherein the three dimensional component is a cat walk.

26. The system of claim 19, wherein the placing a plurality of additional component profiles within the roof truss profile at the point of interest such that the additional component profiles do not interfere with one another or interfere with the component profile of the three dimensional component step further includes the step of:

5 verifying that the placement of structural members is such that the roof truss will design criteria.

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